

IN THE CLAIMS:

1. An optical pickup device comprising:
a plurality of a composite optical devices, each having a light emitting element, a photodetector element and a transparent optical element with a partial reflective plane that are supported on a base body, said composite optical devices having different read/write specifications.
2. The optical pickup device according to claim 1, wherein said light emitting elements of said composite optical devices are different from each other in light emitting wavelength.
3. The optical pickup device according to claim 1, wherein said light emitting elements of said composite optical devices are different from each other in optical output power.
4. The optical pickup device according to claim 1, wherein, said light emitting element, said photodetector element and said transparent optical element in each said composite optical device are disposed so that the optical axis of exit light from said light emitting element and the optical axis of incident light to said photodetector element substantially coincide on said partial reflective plane of said transparent optical element.
5. The optical pickup device according to claim 1, wherein said base body is a semiconductor substrate, said light emitting device is a semiconductor laser, said photodetector element is a photodiode, and said transparent optical element is a prism.

6. A composite optical device comprising:
a plurality of light emitting elements, a photodetector element and a transparent optical element having a partial reflective plane that are provided on a base body, said light emitting elements having different read/write specifications.

7. The composite optical device according to claim 6, wherein said light emitting elements are different from each other in light emitting wavelength.

8. The composite optical device according to claim 6, wherein said light emitting elements are different from each other in optical output power.

9. The composite optical device according to claim 6, wherein each said light emitting element, said photodetector elements and said transparent optical elements are disposed so that the optical axis of exit light from said light emitting device and the optical axis of incident light to said photodetector element substantially coincide on said partial reflective plane of said transparent optical element.

10. The composite optical device according to claim 6, wherein said light emitting elements are arranged side-by-side to align their optical axes substantially in parallel, each said light emitting element having its own said transparent optical element.

11. The composite optical device according to claim 6, wherein said light emitting elements are arranged side-by-side to align their optical axes substantially in parallel, said light emitting elements having a common said transparent optical element.

12. The composite optical device according to claim 6, wherein said light emitting elements are arranged to share a common optical axis and to share a common said optical device.

5 13. The composite optical device according to claim 6, wherein said light emitting elements are disposed at different heights from the surface of said base body.

10 14. The composite optical device according to claim 6, wherein said light emitting elements are arranged to share a common optical axis and to share a part of said photodetector element.

15 15. The composite optical device according to claim 6, wherein said base body is a semiconductor substrate, said light emitting element is a semiconductor laser, said photodetector element is a photodiode, and said transparent optical element is a prism.

20 16. An optical pickup device comprising a plurality of photocouplers having different read/write specifications so as to enable the optical device to read from and write to recording media having a like plurality of different read/write formats.

25 17. The optical pickup device of claim 16, wherein the photocouplers are mounted within a single flat package.

18. The optical pickup device of claim 16, wherein the photocouplers are formed on a common substrate.

30 19. The optical pickup device of claim 16, wherein there are two photocouplers and the photocouplers share a common half mirror such that one

photocoupler is aligned with the axis of the direct light passing through the half mirror while the other photocoupler is aligned with the axis of incident light reflected by the half mirror.

5 20. The optical pickup device of claim 16, further comprising a prism shared in common by the photocouplers with the prism used by the photocouplers to reflect light toward the optical recording medium.

10 21. The optical pickup device of claim 20, wherein the photocouplers share a common reflecting surface of the prism.

15 22. The optical pickup device of claim 20, wherein the prism has a plurality of reflecting surfaces and the photocouplers use different reflecting surfaces of the prism.

 23. The optical pickup device of claim 21, wherein the photocouplers are positioned in side-by-side relationship.

20 24. The optical pickup device of claim 20, wherein the photocouplers are positioned in over-and-under relationship.

 25. The optical pickup device of claim 21, wherein the photocouplers are positioned in confronting relationship on opposite sides of the prism.

25 26. The optical pickup device of claim 25, wherein the photocouplers are operatively interconnected so as to share in common photo diodes located under said prism.

27. An optical disc system comprising an optical pickup device having a plurality of a composite optical devices, each having a light emitting element, a photodetector element and a transparent optical element with a partial reflective plane that are supported on a base body, said composite optical devices having different read/write specifications, a circuit for driving said optical device and a selector for selecting between said composite optical devices.

28. The optical disc system according to claim 27, wherein said light emitting elements of said composite optical devices are different from each other in light emitting wavelength.

29. The optical disc system according to claim 27, wherein said light emitting elements of said composite optical devices are different from each other in optical output power.

30. The optical disc system according to claim 27, wherein, said light emitting element, said photodetector element and said transparent optical element in each said composite optical device are disposed so that the optical axis of exit light from said light emitting element and the optical axis of incident light to said photodetector element substantially coincide on said partial reflective plane of said transparent optical element.

31. The optical disc system according to claim 27, wherein said base body is a semiconductor substrate, said light emitting device is a semiconductor laser, said photodetector element is a photodiode, and said transparent optical element is a prism.

5 32. An optical disc system comprising a plurality of photocouplers having different read/write specifications so as to enable the optical device to read from and write to recording media having a like plurality of different read/write formats, a circuit for driving said optical device and a selector for selecting between said composite optical devices.

10 33. The optical disc system of claim 32, wherein the photocouplers are mounted within a single flat package.

15 34. The optical disc system of claim 32, wherein the photocouplers are formed on a common substrate.

20 35. The optical disc system of claim 32, wherein there are two photocouplers and the photocouplers share a common half mirror such that one photocoupler is aligned with the axis of the direct light passing through the half mirror while the other photocoupler is aligned with the axis of incident light reflected by the half mirror.

25 36. The optical disc system of claim 32, further comprising a prism shared in common by the photocouplers with the prism used by the photocouplers to reflect light toward the optical recording medium.

37. The optical disc system of claim 36, wherein the photocouplers share a common reflecting surface of the prism.

38. The optical disc system of claim 36, wherein the prism has a plurality of reflecting surfaces and the photocouplers use different reflecting surfaces of the prism.

39. The optical disc system of claim 37, wherein the photocouplers are positioned in side-by-side relationship.

5 40. The optical disc system of claim 36, wherein the photocouplers are positioned in over-and-under relationship.

41. The optical disc system of claim 37, wherein the photocouplers are positioned in confronting relationship on opposite sides of the prism.

10 42. The optical disc system of claim 41, wherein the photocouplers are operatively interconnected so as to share in common photo diodes located under said prism.

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